

CALEB FREY

Phillipsburg, New Jersey

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EDUCATION

Rutgers University

BS/MS Materials Science and Engineering

Concentrations in Metallurgy and Renewable Energy

Engineering Honors Academy

New Brunswick, NJ

2017-2022

GPA: 3.750

EXPERIENCE

Riman Research Group

Undergraduate Research Assistant

Jun. 2018 - Mar. 2020

Rutgers Dept. of Material Science and Engineering

- Powder Processing using techniques such as Milling, Pressing, and Filtering
- Sample Analysis using X-Ray Diffraction, Thermal Analysis, and Electron Microscopy
- Development of low-cost reactor control systems with centralized logging and control

microMechanics of Deformation Research Group

Researcher

Jan. 2020 - Present

Rutgers Dept. of Material Science and Engineering

- Model fracture in composite materials using Finite Element Analysis techniques
- Develop a program to generate, run, and analyze models quickly
- Present weekly progress updates at group meetings
- Mentor new group members to help them get started

SKILLS

Analysis Techniques

- Phase Identification with Xray Diffraction and JADE software
- Thermal Analysis with Thermogravimetric Analysis and Differential Scanning Calorimetry
- Absorption Spectroscopy with FTIR and UV/Vis Spectrophotometer

Software and Programming

- Python for Automation and Data Analysis
- OriginLab and Excel for Plotting and Data Entry
- Arduino for hardware-level automation
- ABAQUS for Finite Element Analysis

Certifications

- Rutgers University Lab Safety, Chemical Safety, Biosafety, and X-ray Safety Training
- CFQ International Lean Six Sigma Yellow Belt

INVOLVEMENT

Material Advantage

Chapter Treasurer

2019 - 2020

Rutgers University Chapter

Material Advantage and Keramos

Chapter President

2020-2021

Rutgers University Chapters